

## CLAIMS:

1. A video stream processing circuit, comprising
  - signal processing circuitry (102, 104) arranged to execute a first video stream processing function;
  - a first and second buffer memory (12, 106) coupled to the signal processing circuitry (102, 104), for buffering the frame data produced by the first video stream processing function, the first buffer memory (12) being coupled to the signal processing circuitry via a shareable channel (15), the signal processing circuitry (102, 104) having access to the second buffer memory (106) outside the shareable channel (15),
  - wherein the first video stream processing function comprises writing frame data of successive video frames in a temporally ordered output sequence of frames into the first and/or second buffer memory;
  - the signal processing circuitry (102, 104) being arranged to execute a second video stream processing function using the written frame data in a temporally ordered input sequence of frames that differs from the output sequence, the second video stream processing function being arranged to select to read the frame data of predetermined first and second ones of the frames selectively from the first and second buffer memory (12, 106) respectively, the second ones of the frames occurring in the same temporal order in both the input and output sequence, the first ones of the frames containing at least all particular frames whose position relative to the second ones of the frames in the output sequence differs from the position of the particular frames relative to the second ones of the frames in the input sequence.
2. A video stream processing circuit according to Claim 1, comprising a first integrated circuit (10), which comprises the signal processing circuitry (102, 104) and the second buffer memory (106), and a second, separate integrated circuit that comprises the first buffer memory (12), the shareable channel (15) forming part of a connection between the first and second integrated circuit.

3. A video stream processing circuit according to Claim 1, wherein the second video stream processing function is arranged to last read each particular item of frame data from the second buffer memory (106) at respective times, each before the first video stream processing function has written a full frame following that particular item of frame data.

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4. A video stream processing circuit according to Claim 1, wherein the first video stream processing function includes an MPEG decoding function, the first ones of the frames including at least decoded MPEG P-frames, the MPEG decoding function reading frame data from decoded MPEG I-frames and decoded MPEG P frames from the first buffer memory.

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5. A video stream processing circuit according to Claim 4, wherein the second ones of the frames include B frames.

6. A video stream processing circuit according to Claim 5, wherein the first video stream processing function writes B frames to the second buffer memory (106) only.

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7. A video stream processing circuit according to Claim 4, wherein the second ones of the frames include I frames, the first video stream processing function writing copies of the I frames to both the first and second buffer memory (12, 106).

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8. A video stream processing circuit according to Claim 7, wherein the second ones of the frames include B frames.

9. A video stream processing circuit according to Claim 1, wherein the first video stream processing function comprises an MPEG decoding function, the second video stream processing function reading at least decoded MPEG P-frames from the first buffer memory (12).

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10. A video stream processing circuit according to Claim 1, wherein the first video stream processing function, or a third video stream processing function executed by the processing circuitry (102, 104), reads only selected ones of the frames from the first buffer memory (12), the first video processing function being arranged to write copies of the selected ones of the video frames that also are second ones of the frames to both the first and second buffer memory (12, 106), the first video processing function writing second ones of

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the frames that are not selected ones of the video frames to the second buffer memory (106) only.

11. A video stream processing circuit, comprising
  - 5 - signal processing circuitry (102, 104) arranged to execute a first video stream processing function;
    - a first and second buffer memory (12, 106) coupled to the signal processing circuitry (102, 104), for buffering the frame data produced by the first video stream processing function, the first buffer memory (12) being coupled to the signal processing  
10 circuitry via a shareable channel (15), the signal processing circuitry (102, 104) having access to the second buffer memory (106) outside the shareable channel (15),
      - wherein the first video stream processing function comprises writing frame data of successive video frames in a temporally ordered output sequence of frames into the first and/or second buffer memory;
    - 15 - the signal processing circuitry (102, 104) being arranged to execute a second video stream processing function using the written frame data in a temporally ordered input sequence of frames that differs from the output sequence, the first video stream processing function being arranged to select to write the frame data of predetermined first and second ones of the frames selectively to the first and second buffer memory (12, 106) respectively,  
20 the second ones of the frames occurring in the same temporal order in both the input and output sequence, the first ones of the frames containing at least all particular frames whose position relative to the second ones of the frames in the output sequence differs from the position of the particular frames relative to the second ones of the frames in the input sequence.
- 25 12. A method of video stream processing, the method comprising
  - using signal processing circuitry (102, 106) to execute a first and a second video stream processing function, the first video stream processing function producing frame data of successive video frames in a temporally ordered output sequence of frames, the  
30 second video stream processing function using the frame data in an ordered input sequence of frames that differs from the output sequence;
    - buffering the frame data between application of the first and second video processing function to the frame data in a first and/or second buffer memory (12, 106), the first buffer memory (12) being coupled to the signal processing circuitry via a shareable

channel (15), the processing circuitry not using the shareable channel (15) to access the second buffer memory (106);

- reading frame data from predetermined first and second ones of the frames for use by the second video processing function selectively from the first and second buffer
- 5 memory (12, 106) respectively, the second ones of the frames occurring in the same temporal order in both the input and output sequence, the first ones of the frames containing at least all particular frames whose position relative to the second ones of the frames in the output sequence differs from the position of the particular frames relative to the second ones of the frames in the input sequence.